



**PennState**  
College of Medicine

# Implementing ADEPT-CARE as a Novel Teaching Tool to Improve Medical Education

Lydia Smeltz  
Third-Year Medical Student, Penn State COM



# Financial Disclosures and Acknowledgements

**Funding:** LS is funded by the Alliance for Disability in Health Care Education and the Woodward Center for Excellence in Health Sciences Education (Penn State College of Medicine).

**Publications:** Smeltz L, Carpenter S, Benedetto L, et al. ADEPT-CARE: A Pilot, Student-Led Initiative to Improve Care for Persons with Disabilities via a Novel Teaching Tool. *Disability and Health Journal*. 2023:101462.

Smeltz, L., Carpenter, S., Benedetto, L., Newcomb, N., Rubenstein, D., King, T., Lunsford, C., Shaw, T., & DeWaters, A. Introduction to Disability and Anti-Ableist Healthcare: A Pilot, Student-Led Module for Preclinical Medical Students. *AJPM&R*. [Accepted, awaiting publication].

**Prior Presentations:** DAC Med Conference (15 October 2022) and American Academy for Cerebral Palsy and Developmental Medicine Annual Meeting (22 September 2022) - Both of these presentations were educational and void of data.

Association of Academic Physiatry Medical Student Council May Journal Club - Medical Education; Smeltz, L., Churukha, C., King, T., Newcomb, N., & DeWaters, A. (5 November, 2023). “ADEPT-CARE” for Disabled Patients: Continuing Medical Education for Patient-Facing Employees. AAMC Learn Serve Lead Conference.; Smeltz, L., Churukha, C., King, T., Newcomb, N., & DeWaters, A. (18-20 October, 2023). “ADEPT-CARE” for Disabled Patients: CME for Academic Medical Center Patient-Facing Employees. AMA Abstract Research Challenge - Poster Symposium Hall. Virtual. Member Site, Underline Science Inc. DOI: 10.48448/xfka-9a66.



# Objectives



- (1) Describe how ADEPT-CARE was developed
- (2) Provide an overview of the ADEPT-CARE Protocol
- (3) Describe implementation amongst PSCOM and PSH
- (4) Results of initial implementation
- (5) Next Steps & Involvement



# What is the problem? State of Medical Education & Disability Health

- Only 52% of accredited MD and DO schools include “disability awareness” in their curriculum<sup>1</sup>
  - 80% of medical students at one institution felt their disability education was inadequate<sup>2</sup>
    - Specific discomfort with H&P
  - Lack of available, standardized, comprehensive resources
- Goal: To develop, pilot, and evaluate a novel teaching mnemonic (ADEPT-CARE) for performing a comprehensive H&P for disabled patients

<sup>1</sup> Ioerger M, Flanders RM, French-Lawyer JR, Turk MA. Interventions to Teach Medical Students About Disability: A Systematic Search and Review. *American Journal of Physical Medicine & Rehabilitation*. 2019;98(7):577-599.; <sup>2</sup> Chardavoine PC, Henry AM, Sprow Forté K. Understanding medical students' attitudes towards and experiences with persons with disabilities and disability education. *Disabil Health J*. 2022;15(2):101267.

# ADEPT-CARE Development

- Inter-institutional collaboration, importantly - ***with involvement*** from disabled medical students and mentors
- Leveraged ADHCE Core Competencies on Disability and National League for Nursing materials
- Created a mnemonic → “ADEPT-CARE”

**Pearl:**

Medical Students are capable of creating change at their own institutions and other institutions.

**Table 1**

A summary of the ADEPT-CARE protocol for obtaining a history and performing an exam for persons with disabilities.

Letter	Recommendation	Description & problem representation	Sample questions/statements
<b>A</b>	Ask about <b>Access</b> needs and <b>Accommodations</b> in the healthcare environment	<ul style="list-style-type: none"> <li>• Accessibility-related barriers to healthcare, especially transportation and communication barriers, are common and mitigatable.</li> <li>• There is a lack of accessible medical diagnostic equipment. When accessible equipment is available, it is not consistently utilized.</li> <li>• Consider access needs related to interpreter services, physical facility accessibility, medical equipment, medical forms, time, face masks, services animals, assistive technologies, transportation, and scheduling.</li> <li>• When appropriate, document accommodations in the medical record for future visits.</li> </ul>	<ul style="list-style-type: none"> <li>• What can we do to make your visit to our clinic more accessible to you?</li> <li>• Did you have any difficulty accessing the clinic today?</li> <li>• Did you find our scheduling system accessible?</li> </ul>
<b>D</b>	<b>Defer</b> to the <b>Disabled</b> person	<ul style="list-style-type: none"> <li>• It is okay to ask a patient about their disability.</li> <li>• Inquiring about a patient's disability status and/or identity can build rapport and allow one to provide enhanced patient-centered care.</li> <li>• When meeting someone for the first time, default to person-first language (i.e., a person with a disability).</li> <li>• Some patients may prefer identity-first language (i.e., a disabled person)</li> </ul>	<ul style="list-style-type: none"> <li>• How do you explain your [disability/diagnosis] to others?</li> <li>• How does your [disability/diagnosis] affect you?</li> </ul>
<b>E</b>	<b>Engage</b> with the patient	<ul style="list-style-type: none"> <li>• Use the patient's language preference after inquiring.</li> <li>• Talk directly to the disabled person.</li> <li>• Avoid directing the conversation at whomever may be accompanying them to the appointment.</li> <li>• Communicate as you would with a non-disabled patient: Speak in the same manner, tone, and volume.</li> <li>• Effective communication lets disabled patients know you are attuned to their concerns and needs which increases the likelihood of seeking care and following through with recommendations.</li> <li>• Communication may be supported by an interpreter, communication board, or other tools.</li> </ul>	<ul style="list-style-type: none"> <li>• What is your preferred method of communication?</li> <li>• Do you need any accommodations for communication?</li> <li>• I'm sorry, I don't think I understood you. Let me try explaining this in a different way.</li> </ul>
<b>P</b>	Promote <b>Participation</b> and <b>Patient-Centered</b> care	<ul style="list-style-type: none"> <li>• Promote patient autonomy by engaging with the patient, even if they are accompanied by someone or are non-speaking/non-verbal.</li> <li>• Consider the use of shared or supported decision-making.</li> <li>• Respect boundaries. Adaptive and assistive devices, such as wheelchairs and service animals, are an extension of a person with a disability. You should not touch these devices or attempt to help a disabled person without first asking for consent or permission.</li> </ul>	<ul style="list-style-type: none"> <li>• Are you comfortable with everyone here being present for our discussion?</li> <li>• What is the best way to help you?</li> <li>• Do you need assistance with dressing or getting onto the table?</li> <li>• May I move your belongings for you?</li> </ul>
<b>T</b>	Take <b>Time</b> for a <b>Thorough</b> medical history and physical exam	<ul style="list-style-type: none"> <li>• Perform a comprehensive physical exam. Avoid examining a patient in their wheelchair as this may lead to an incomplete exam.</li> <li>• Disparities in physical, sexual, reproductive, and mental health are stark for disabled patients. Do not skip any parts of the history or exam.</li> <li>• As with non-disabled patients, variable clinical encounter lengths are inherent to medical practice.</li> </ul>	<ul style="list-style-type: none"> <li>• Do you need a lift to help you transfer to the exam table for the physical exam?</li> <li>• What is the best way for me to do this [exam maneuver]?</li> <li>• Is there any [exam maneuver] or body area I should avoid? Is there anything I should be aware of before I perform [exam maneuver]?</li> </ul>

C	Consider disability-related <b>Conditions</b>	<ul style="list-style-type: none"> <li>• People with disabilities are disproportionately exposed to risk factors for preventable health conditions, manifesting in increased prevalence of chronic conditions, such as cardiovascular diseases, diabetes, obesity, and depression.</li> <li>• These co-existing conditions are further exacerbated by physical inactivity and mental health conditions, which have increased prevalence among the disabled community and are major risk factors for chronic disease.</li> <li>• Both disabled men and women are at a higher risk of experiencing sexual violence, sexual coercion, and unwanted sexual experiences.</li> <li>• Some disabled people may be more vulnerable to abuse due to the need for personal assistant and personal caregiving.</li> <li>• Healthcare providers are mandatory reporters for abuse or neglect.</li> </ul>	<ul style="list-style-type: none"> <li>• Have you ever felt unsafe with a caregiver or other person in your life?</li> <li>• Has anyone physically hurt you?</li> <li>• Has anyone forced you to have sexual activities?</li> <li>• Has anyone ever prevented you from using an assistive device?</li> <li>• Has anyone you depend on refused to help you?</li> </ul>
A	Ask about <b>Access</b> needs and <b>Accommodations</b> in the home and community	<ul style="list-style-type: none"> <li>• When assessing social determinants of health and social needs for people with disabilities inquire about the accessibility of community-based resources and accommodations.</li> <li>• Transportation barriers affect access to society, physical activity sites, grocery stores, pharmacies, social support, and more.</li> </ul>	<ul style="list-style-type: none"> <li>• What accommodations [modifications, supports] do you have at home?</li> <li>• Do you have home modifications?</li> <li>• Tell me about the community where you live.</li> <li>• Do you have personal care assistance?</li> <li>• How long have you had your current [assistive device]?</li> </ul>

*(continued on next page)*

## ARTICLE IN PRESS

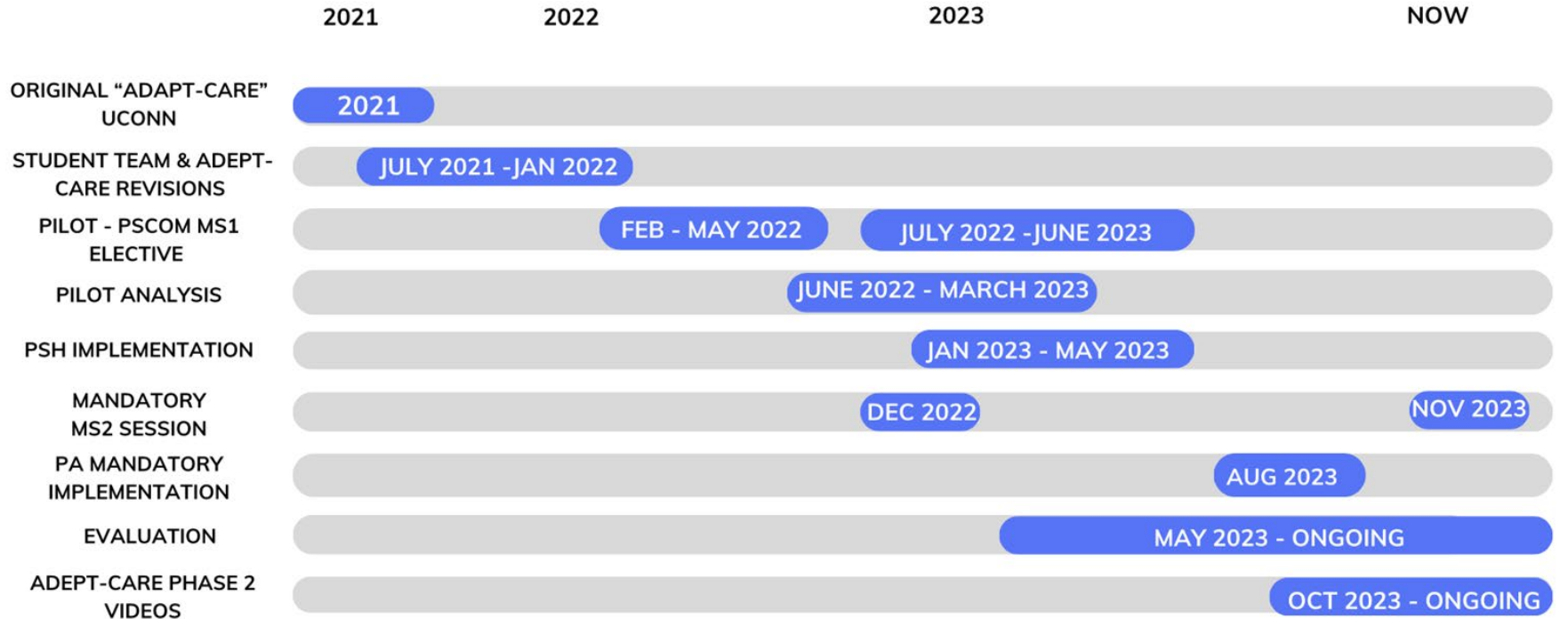
*L. Smeltz, S. Carpenter, L. Benedetto et al.*

*Disability and Health Journal xxx (xxxx) xxx*

**Table 1** *(continued)*

Letter	Recommendation	Description & problem representation	Sample questions/statements
R	<b>Review</b> the treatment plan and <b>Respond</b> to feedback	<ul style="list-style-type: none"> <li>• The cost of home modifications illustrates financial and physical accessibility barriers.</li> <li>• Review the treatment plan to assess the patient's understanding and solicit feedback on how to provide better care.</li> <li>• When a disabled patient corrects you or offers feedback, actively listen, and change your behavior accordingly.</li> <li>• Provide after-visit summaries and follow-up information in a format that is accessible to the patient.</li> </ul>	<ul style="list-style-type: none"> <li>• Tell me about your exercise routine.</li> <li>• I want to make sure that I was clear today. Can you please summarize what we just went over in our visit and what the plan is going forward?</li> <li>• How would you like me to give you the after-visit instructions?</li> </ul>
E	<b>Ensure</b> accessible follow-up and referral	<ul style="list-style-type: none"> <li>• Consider the accessibility of any patient education materials and/or referrals.</li> <li>• Recognize the importance of interprofessional care for disabled patients.</li> <li>• Collaborate and communicate with other providers to optimize care.</li> <li>• Ensure that the patient has a method to communicate with your clinic that is accessible to them in case questions arise.</li> </ul>	<ul style="list-style-type: none"> <li>• What questions do you have for me about what we went over during your visit today?</li> <li>• I will call the imaging facility to let them know what accommodations you require for your mammogram.</li> <li>• I confirmed that this specialist has an accessible practice.</li> <li>• Let us talk more about this [health program] in your local community that may be accessible to you.</li> </ul>

# A Brief History of ADEPT-CARE





# Implementation Details

	<b>Penn State Pilot - Spring 2022</b>	<b>USF</b>	<b>PSH</b>	<b>Penn State Today</b>
<b>Year in Training</b>	First-year medical students	Medical students and residents	All patient-facing employees voluntarily invited to participate	First-year medical students Second-year medical students First-year Physician Assistant students
<b>Number of Participants</b>	33 pre-survey responses 21 post-survey responses	47 pre-survey responses 42 post-survey responses	14,000	All [Mandatory Session(s)]
<b>Implementation Environment</b>	“Flex Hours” within Health Systems Science course Asynchronous, self-paced	Online, self-paced, stand-alone	Asynchronous module/video	MS1 - asynchronous module/video MS2 - In-person with panel PA - asynchronous module/video

# ADEPT-CARE Results

## First-Year Medical Students

- ALL (100%) of student participants reported (agree/strongly agree) ...
  - That they will **use** ADEPT-CARE to assess patients with disabilities
  - ADEPT-CARE will help them to **take better care** of patients with disabilities
  - A desire to receive more training on disability

Smeltz L, Carpenter S, Benedetto L, et al. ADEPT-CARE: A Pilot, Student-Led Initiative to Improve Care for Persons with Disabilities via a Novel Teaching Tool. *Disability and Health Journal*. 2023;101462.

## PSH Patient-Facing Staff

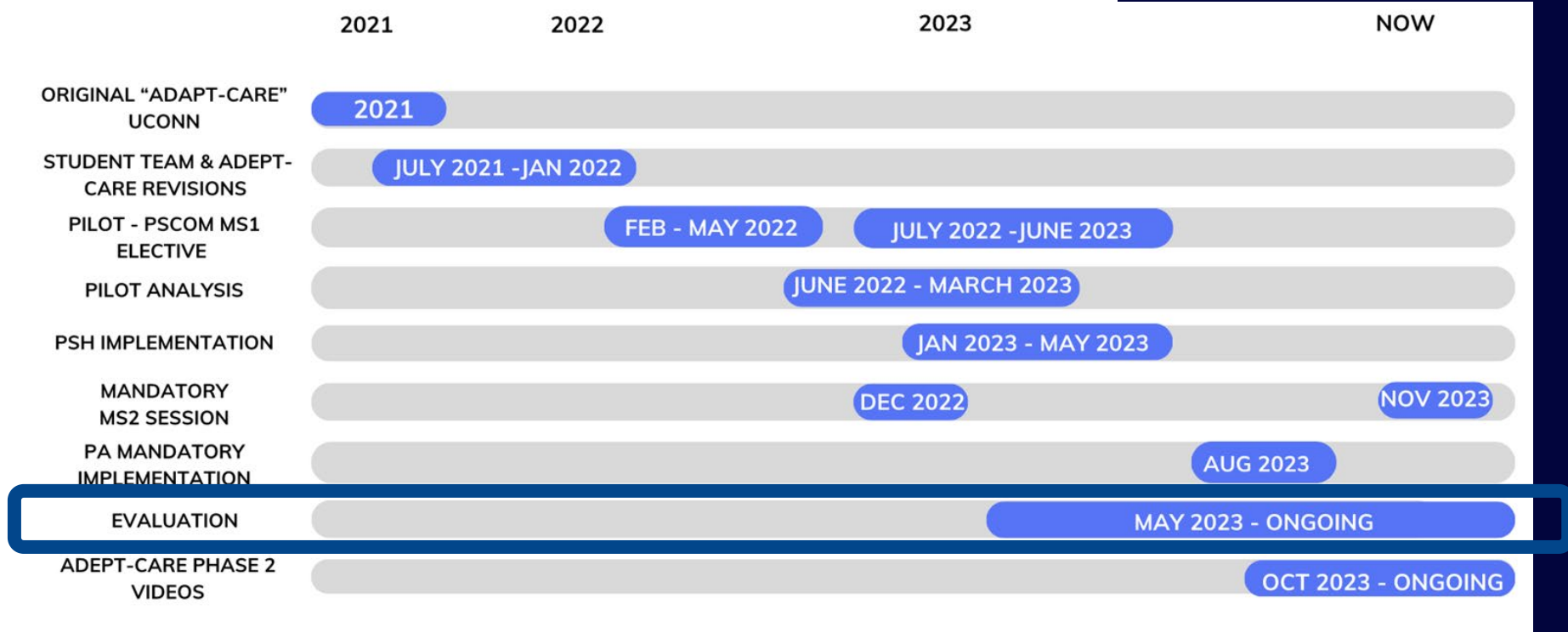
- Nearly all participants agreed that the ADEPT-CARE module ...
  - Increased their **confidence** in caring for PWD (N = 1,396, 93.1%)
  - Improved their **knowledge** of disability health (N = 1,425, 94.6%)
  - Will help them **take better care** of PWD (n = 1,463, 96.5%)

"ADEPT-CARE" for Disabled Patients: Continuing Medical Education for Patient-Facing Employees. AAMC Learn Serve Lead Conference; Smeltz L, Churukha, C., King, T., Newcomb, N., & DeWaters, A. (18-20 October, 2023). "ADEPT-CARE" for Disabled Patients: CME for Academic Medical Center Patient-Facing Employees. AMA Abstract Research Challenge - Poster Symposium Hall. Virtual. Member Site, Underline Science Inc. DOI: 10.48448/xfka-9a66.

# Recap & Progress Thus Far

- Pilot PSU results were promising! → *manuscript published*
- Assess generalizability with USF data analysis → *manuscript in process*
- Assess generalizability with other health professions students, i.e. nursing students, physician assistant students, etc. → *data collected, analysis in process*
- Assess efficacy and generalizability with practicing healthcare professionals → *data analysis phase*
- Continue to promote ADEPT-CARE as a valuable teaching tool → *ongoing*

# More Analysis & Results Coming Soon!



# Next Steps

- Evaluation of PA data & manuscript writing
- PSH data manuscript writing
- Longitudinal data evaluation with students
- Development of phase II videos → focused on pediatrics patients and patients with I/DD
  - ARC of PA partnership
- Curriculum sustainability
- Curriculum dissemination
  - Institutional partnerships
  - DIT
  - Academic conferences/presentations
  - Community presentations

# + Summary

- Goal: To develop, pilot, and evaluate a novel teaching mnemonic (ADEPT-CARE) for performing a comprehensive H&P for disabled patients
- Fills a reported gap in medical education → directly address students' discomfort performing an H&P with disabled patients
- ADEPT-CARE has the potential to be an easily understandable teaching tool
- Could be effectively and flexibly implemented into medical education



**PennState**  
College of Medicine

# Thank you!

---

Lydia Smeltz  
Twitter/X: @LydiaSmeltz  
[ismeltz1@pennstatehealth.psu.edu](mailto:ismeltz1@pennstatehealth.psu.edu)  
[lydiasmeltz@gmail.com](mailto:lydiasmeltz@gmail.com)

